

Notice of Allowability

Application No.

10/674,149

Examiner

Dennis L. Vautrot

Applicant(s)

GUPTA, AJAY K.

Art Unit

2167

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 9/12/2006.
2. ☒ The allowed claim(s) is/are 1-7,9-11,14 and 17-21.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 20061115
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

1. This Action is responsive to the applicant's amendment filed September 12, 2006. After a thorough search and examination of the present application and, in light of a telephone interview conducted November 15, 2006 and a follow up conversation on November 20, 2006, and the prior art made of record, Claims 1 – 7, 9 – 11, 14, and 17 - 21 are allowed. These claims have been renumbered 1 – 16.

Specification

2. The changes to the specification submitted on September 12, 2006 have been accepted, therefore the objection to the specification is withdrawn.

Examiner's Amendments

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

4. Authorization for this Examiner's amendment, listed below, was given in a telephone interview with Mr. James Lucas (Registration Number 21,081) on November 15, 2006. The interview summary is attached.

5. Please amend claims 11 – 17 as follows:

11. (Currently Amended) In a database including a primary and a secondary server and a high availability data replicator adapted to synchronize the secondary server with the primary server, a smart large object application program interface residing on the secondary server, the smart large object application program interface comprising:

a smart large object read module adapted to read data from a smart large object without acquiring a lock on said smart large object, said read data being communicated to a client; and

an exception module adapted to send an exception to said client responsive to a synchronizing event of the high availability data replicator modifying said smart large object;

an update module adapted to update said smart large object responsive to said synchronizing event; and

a cache module adapted to create a memory cache of said smart large object, said smart large object read module accessing said memory cache during a read, said cache module being further adapted to update said memory cache responsive to said updating of said large smart object.

12. (Currently Canceled)

13. (Currently Canceled)

14. (Currently Amended) An article of manufacture comprising one or more non-volatile storage media encoding instructions for performing a high availability data replication process that synchronizes a secondary server with a primary server of a database that includes smart large objects, the process comprising:

ordering log entries of a smart large object modifying operation performed on the primary server in a selected order wherein a log entry corresponding to updating a large object header of said smart large object is consistent immediately upon execution;

transferring log entries including said log entries of said smart large object modifying operation from the primary server to the secondary server; and

identifying a read operation accessing said smart large object, and communicating an exception and error code to a client associated with the read operation;

replaying said transferred log entries on the secondary server, the replaying of said log entries of said smart large object modifying operation being performed in the selected order without locking said smart large object on the secondary server, thereby insuring consistency of the data being transferred from the primary server to the secondary server, wherein the replaying of the log entries includes modifying said smart large object on the secondary server; and

communicating an exception including said error code to said client.

15. (Currently Canceled)

16. (Currently Canceled)

17. (Currently Amended) The article of manufacture as set forth in claim ~~45~~14, wherein:

the replaying of said log entries of said smart large object modifying operation includes deleting said smart large object on the secondary server; and
the communicating of an exception includes invalidating a large object header associated with said read operation.

Reasons For Allowance

6. The following is an examiner's statement of reasons for allowance:

In the Examiner's Office Action for non-Final Rejection of 13 June 2006, Independent claims 1 and 11 along with their dependent claims were rejected under 35 U.S.C. 103(a) as being unpatentable over Bruso et al. (6,615,219) in view of Holenstein et al. (US 2003/0037029). Independent claim 14 was rejected under 35 U.S.C. 102(b) as being anticipated by Holenstein et al. (US 2003/0037029).

In the Amendment filed 12 September 2006, Applicant amended claims 1, 5, 6, 9, 11, and 14 to overcome the rejections. Dependent claim 8 was incorporated into independent claim 1. Also, Claim 21 was also added to clarify the invention. During a subsequent telephone interview, Applicant agreed to incorporate claims 12 and 13 into

claim 11, as well as claims 15 and 16 into independent claim 14, along with some additional language.

After further review of the search results previously conducted and Applicant's most currently amended claims and consideration of the Remarks, the Examiner is persuaded that the prior art made of record does not teach the subject matter described in the further amended independent claims.

Specifically, **"Initiating a transaction on the secondary server that includes reading a smart large object, the transaction initiated without locking the smart large object on the secondary server"** and **"responsive to a replay or read on the secondary server of a log entry by said replicator that alters said smart large object, sending an exception to the initiated transaction"** was not able to be found in prior art. Examiner is persuaded that the combination of the above highlighted subject matter with other detailed implementation steps made the combined subject matter distinct from prior art.

An expanded and updated search for the prior art in the EAST database and on domains (NPL-ACM, Google.com, NPL-IEEE, Dialog Datastar) has been conducted. The prior art searched and investigated in the database and domains does not fairly teach or suggest the teaching of the claimed subject matter as described above and reflected by the combined elements in each of the independent claims 1, 11, and 14.

The dependent claims 2 – 7, 9-10, and 20 depending on claim 1 and 17 – 20 depending on claim 14 are also distinct from the prior art for the same reason.

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7. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis L. Vautrot whose telephone number is 571-272-2184. The examiner can normally be reached on Monday-Friday 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cottingham can be reached on 571-272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DV
20 November 2006


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